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Model No. DMAT-O-42

SPORTS CONTROLLER

For

4 Record / 2 Playback Configuration

Odetics Protocol

User Manual

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I. REVISION HISTORY

032403	1.1	Updated.
040403	1.2	Added Profile VIDEO SERVER SETUP, Section 3.b.
070803	1.3	Revised Section 3.b., VIDEO SERVER SETUP. Added Section 9, TRIM EXISTING CLIP.
120103	1.4	Company header information revised. Added DNF Controls Limited Warranty.
052804	1.5	Updated SETUP MENU.
070604	1.6	Updated product name.
111004	1.7	Added Gang description and Preroll function.
052705	1.8	Updated to conform to current software.
012306	1.9	Minor corrections

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Getting Started

II. SYSTEM DESCRIPTION

The DMAT-O Sports Controller provides the same functionality found on the popular sports replay systems, and meets the needs of the demanding sports replay operators.

Operators may easily generate slow-motion instant replays as well as build, manage and playout highlight lists with minimal key presses. DMAT-O's easy to read display provides fast access to required information and metadata. Utilizing the simultaneous record and playback capability of the video server, DMAT-O gives the operator control over the production process so they Don't Miss A Thing.

The DMAT-O consists of DNF's most robust controller, the ST400, with Sports Control software. The DMAT-O will control most video servers with the following capabilities:

Support Odetics Broadcast control protocol.
Provide at least 1 Record Channel and 1 Playback Channel with common storage.

Definitions

Throughout this document, DDR, VDR & Video Server will be referred to collectively as "Video Server."

Words surrounded by brackets, for example, **[ENTER]**, refer to keys on the DMAT-O.
[XXX] + **[XXX]** refers to a combination of more that one key. Press and hold the first key, then press the second key. Keys may be released in any order.

Words surrounded by "curly" brackets in bold/italic type, ***{UPDATES}***, are softkeys on the DMAT-O.

The 6 keys located directly below the Graphic LCD display are referred to as "Softkeys." The function assigned to each key will change during operation of the device. The bottom line of the display shows the current function assigned to each softkey.

III. SYSTEM INSTALLATION

Refer to the Connection Diagram.

A. DMAT-O Sports Controller

1. Plug one end of a standard 9-conductor, RS422 serial cable into the VTR1 connector on the rear of DMAT-O. Plug the other end of the cable into the 9-pin RS422 connector on the Video Server associated with Playback Channel 1.

2. Plug one end of a standard 9-conductor, RS422 serial cable into the VTR2 connector on the rear of DMAT-O. Plug the other end of the cable into the 9-pin RS422 connector on the Video Server associated with Playback Channel 2.

3. Connect the supplied POWER SUPPLY, APX#4108, into the POWER connector on the rear of DMAT-O. Plug the Power Supply into an outlet, 90 VAC - 240 VAC.

4. Connect unbalanced “Time Of Day” time source (LTC) to the LTC Input connector on the rear of DMAT-O, using a BNC cable

5. Connect Black Burst Signal to the ref. Video Connector on the back of the DMAT-O using a BNC cable.

B. Video Server Setup

Select ODETICS Broadcast communications protocol on the VIDEO SERVER playback channels to be controlled.

For PROFILE Video Server only (if planning to use in Drop Frame):

1. On VDRPanel, use the mouse to select the playback channel assigned to P1 (VTR1) on DMAT-O.

2. Select OPTIONS pull down menu.

3. Select DROP FRAME.

4. On VDRPanel, use the mouse to select the playback channel assigned to P2 (VTR2) on DMAT-O.

5. Select OPTIONS pull down menu.

6. Select DROP FRAME.

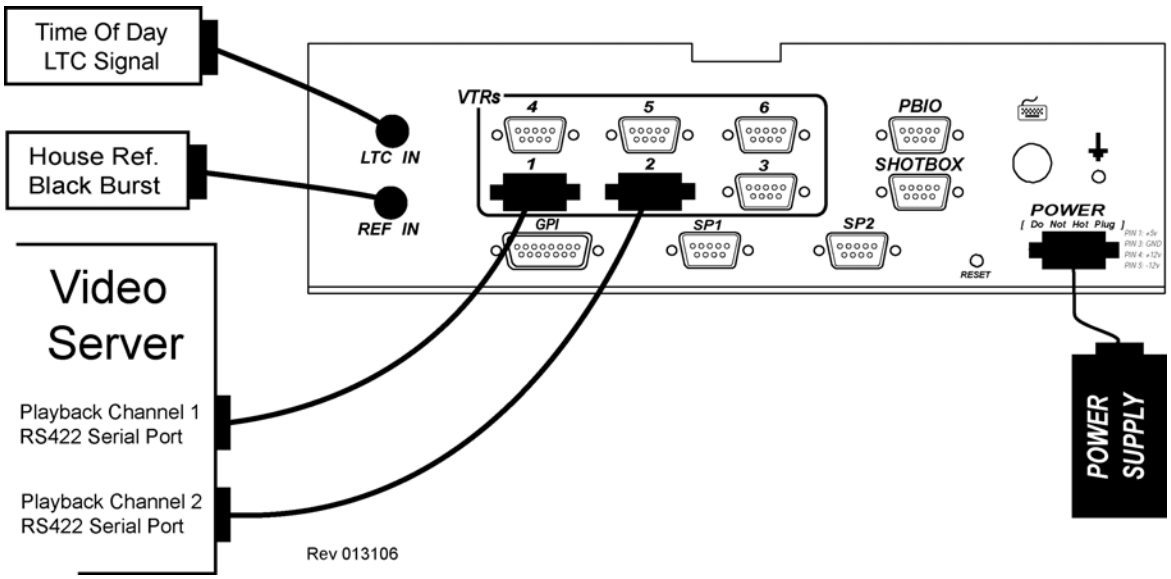
7. Connect the camera outputs/source video to the record channels (up to 4)

8. Assign each record channel a unique name (REC 1, REC 2, REC 3, REC 4).

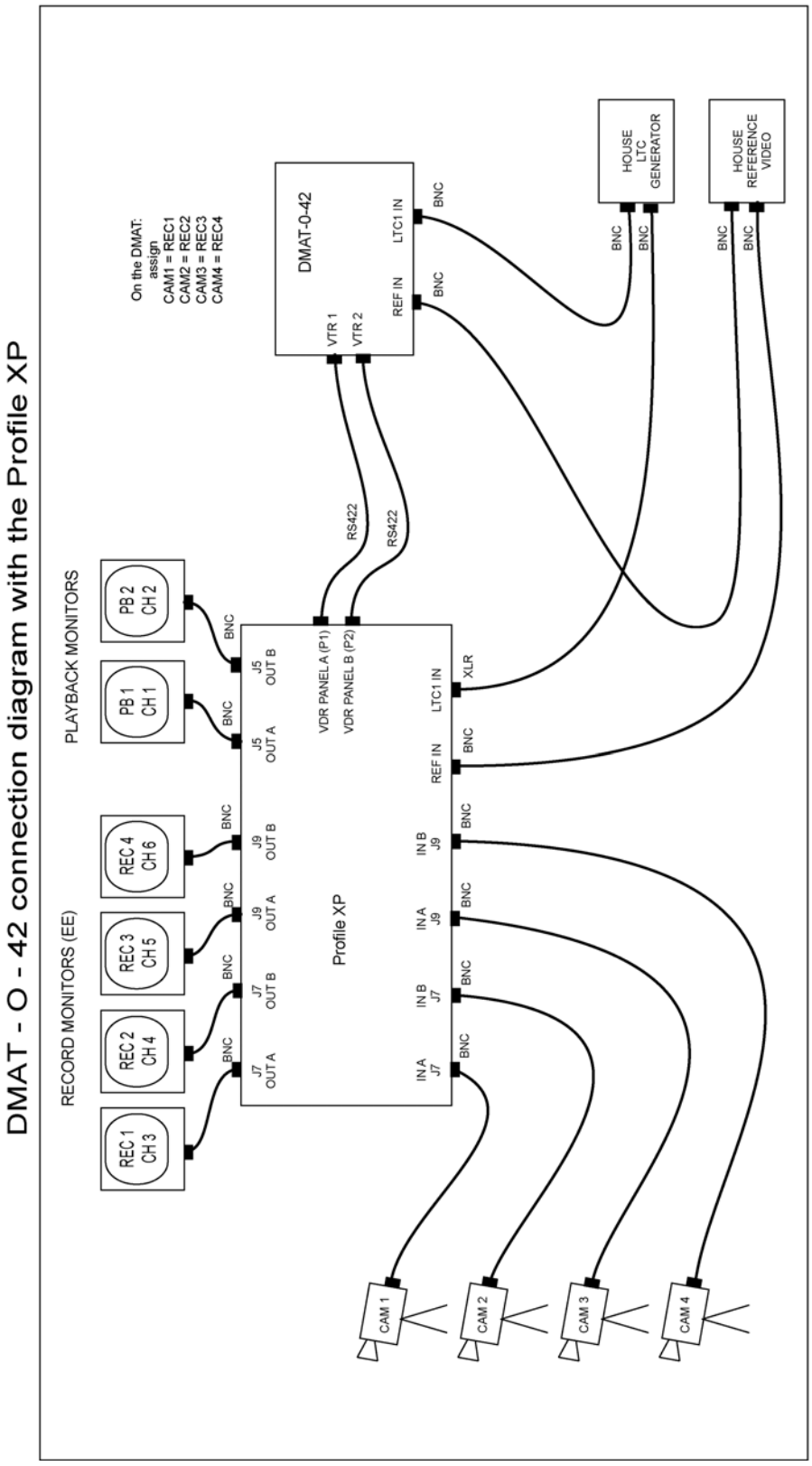
9. Manually (on each channel) start the record process before beginning of event.

NOTE – All record and playback clips must be located in the “Default” directory.Installation is complete.

C. Connection Diagram



D. Typical Installation



IV. MASTER RECORD CLIP ASSIGNMENT

A. Press **[P1]** or **[P2]** to select the playback channel.

B. Press **[SHIFT]** + ***{CAM1}***, **[SHIFT]** + ***{CAM2}***, **[SHIFT]** + ***{CAM3}***, or **[SHIFT]** + ***{CAM4}***.

   The current assignments are shown in the upper left portion of the display. A list of available clips in the video server is displayed on the right side of the display.

C. Using the wheel, scroll through and find the CLIP IDs that were created in Section #3 on the Video Server.

D. Press softkey ***{CAM1}*** to assign the highlighted clip to CAM1 (record channel 1).
   Press softkey ***{CAM2}*** to assign the highlighted clip to CAM2 (record channel 2).
   Press softkey ***{CAM3}*** to assign the highlighted clip to CAM3 (record channel 3).
   Press softkey ***{CAM4}*** to assign the highlighted clip to CAM4 (record channel 4).

E. Press **[ESC]** to exit.

V. INPUT SELECTION

Select the Input (Master Record Clip) to view in EE and PB modes on the current playback channel. Refer to Section 4, MASTER RECORD CLIP ASSIGNMENT. This selection may be changed at any time. This selection may be changed many times during a production.

Press **[P1]** or **[P2]** to select the playback channel.

Press ***{CAM1}*** to select its assigned Master Record Clip.
Press ***{CAM2}*** to select its assigned Master Record Clip.
Press ***{CAM3}*** to select its assigned Master Record Clip.
Or
Press ***{CAM4}*** to select its assigned Master Record Clip.

This input assignment will determine the clip number range used when saving and recalling clips on this playback channel.

For example:

> Assign CAM3 to playback channel 1.
> Mark an In point and Out point, then press the Save Clip key.
> The In and Out point will be saved in the next available clip in the number range 3001 to 3399.
>
> Assign CAM4 to playback channel 2.
> Mark an In point and Out point, then press the Save Clip key.
> The In and Out point will be saved in the next available clip in the number range 4001 to 4399.

VI. GANG CHANNELS

Press **[GANG]** key. Gang LED turns on. P1 and P2 channels are ganged for playback.

Set “Gang Record” option (see SETUP MENU section) in order to select which camera angles will be used to create clips in Gang Mode.

NOTE: You must have Reference Video connected in order to gang Channels.

VII.CLIP NUMBERING

Clip numbers range from 1000 to 1399, 2000 to 2399, 3000 to 3399, and 4000 to 4399.

The 1st digit refers to the Input from which the clip was created. All clips created from CAM1 will be saved in clip numbers 1000 to 1399.

Saving Clips
After marking an In point and Out point, then press the Save Key. The created clip will be saved at the next available clip number, in the number range corresponding to the input currently selected on the playback channel.

If a 4-digit number is entered prior to pressing the Save Clip key, then the clip will be saved at the entered clip number.

If a 3-digit number is entered prior to pressing the Save Clip key, then the clip will be saved at the entered clip number in the number range corresponding to the input currently assigned to the playback channel.

Recalling Clips
If a 4-digit number is entered prior to pressing the Recall Clip key, the entered clip number will be recalled.

If a 3-digit number is entered prior to pressing the Recall Clip key, the playback channels currently assigned input will determine the number range from which the clip will be recalled.

For example:

Assign CAM3 to playback channel 1.
Enter ‘123’ then press the Recall Clip key.
Clip number 3123 will be recalled.

VIII. SAVE CLIP

A. Press **[IN]** to mark an IN point.

B. Press **[OUT]** to mark an OUT point.

C. Press **[SAVE CLIP]** to save the IN and OUT points in the next available clip number in the number range corresponding to the playback channel's current selected input.
OR

Manually enter clip number using the numeric keypad, then press **[SAVE CLIP]** to save the IN and OUT points into the manually entered clip number.

The IN point HH:MM:SS is assigned as the default Clip Label.

D. Press **[DEL]** + **[IN]** to delete the In point, in PB mode.

E. Press **[DEL]** + **[OUT]** to delete the Out point, in PB mode.

If clip is saved in EE mode, the current LTC (Time-of-Day) is used as it's IN/OUT points. If there is gang established when saving clips, all channels that are part of Gang Record will save clips.

If clips are saved in PB mode, the current Playback Time is used as IN/OUT point. If there is gang, both P1 and P2 save the clips.

IX. RECALL CLIP

A. Press **[NEXT]** to highlight the next clip in the clip list portion of the display.

B. Press **[LAST]** to highlight the previous clip in the clip list portion of the display.

C. Press **[RECALL CLIP]** to recall the selected clip.
OR

Manually enter a clip number using the numeric keypad, then press **[RECALL CLIP]** to recall the manually entered clip number.

If a 3-digit number is entered, the clip number in the range corresponding to the playback channel's currently selected input will be recalled.

X. TRIM EXISTING CLIP

Mark a new IN point, or new OUT point, or new IN & OUT point.

A. Recall an existing clip.

B. Use transport keys to locate a new IN point.

C. Press **[IN]** to mark the new IN point.

D. Use transport keys to locate desired OUT point.

E. Press **[OUT]** to mark the new OUT point.

F. Press **[SAVE CLIP]** to replace original clip with trimmed clip.
OR

Manually enter clip number using the numeric keypad, then press **[SAVE CLIP]** to save trimmed clip as a new clip.

XI. LABEL OR RE-NAME AN EXISTING CLIP

A higlighted clip can be given a new label by entering text on the PC keyboard and pressing the Enter key.

XII. CREATE PLAYLIST

A. To select Playlist, enter 2-digit number, from '00' to '19', on the numeric keypad, then press **[LIST]**.

B. Press **[ADD/INS]** to append the current clip to the end of the current Playlist.
OR

Press **[ALT]** + **[ADD/INS]** to insert the current clip above the highlight bar.
OR

Enter clip number using the numeric keypad, then press **[ADD/INS]** to append the entered clip number to the end of the current Playlist.
OR

Enter clip number using the numeric keypad, then press **[ALT]** + **[ADD/INS]** to insert the entered clip above the highlight bar.
OR

Press **[DEL ELEM]** to delete the currently highlighted element.

XIII. ASSIGN SPEED TO PLAYLIST ELEMENT

A. Press **[NEXT]** or **[LAST]** to highlight the desired element in the current playlist.

B. Press the ***{SPEED}*** softkey.

C. Move the T-bar to set the desired speed.

D. Press **[ENTER]**, **[NEXT],** or **[LAST]** to assign the T-bar speed to the current element.
OR

Press **[ESC]** to exit without assigning speed to element.

XIV. DMAT-O FUNCTION TABLE

Current Mode	Operation	Function	Next Mode	Description
EE	T-BAR	Slow Motion	PB	Slow Motion Playback.
	[SLOMO]	Slow Motion	PB	Slow Motion Playback.
	[SHIFT] + T-BAR	Set Slow Motion Speed	EE	Set Slow Motion speed without affecting current transport mode.
	[PLAY]	Play	PB	Playback from current time of day time.
	[JOG]	Jog	PB	Jog from current time of day time.
	[FFWD]	FFWD	PB	FFWD from current time of day time (press & hold key).
	[RWD]	RWD	PB	RWD from current time of day time (press & hold key).
	[SHUT]	SHUTTLE	PB	Shuttle from current position.
	[NEXT]	Highlight Next Clip	EE	Highlight Next Clip in CLIP LIST.
	[LAST]	Highlight Previous Clip	EE	Highlight Previous Clip in CLIP LIST.
	Enter Time Code + **[GOTO]**	Goto TC	PB	Search to entered time code.
	[IN]	Mark IN Point	EE	Mark IN POINT based upon RECORD time.
	[OUT]	Mark OUT Point	EE	Mark OUT POINT based upon RECORD time.
	[SAVE CLIP]	Save CLIP	EE	Save a CLIP with IN and OUT point at next available clip number.
	Enter Number + **[SAVE CLIP]**	Save CLIP	EE	Save a CLIP with IN and OUT point at entered clip number.
	[RECALL CLIP]	Recall CLIP	CP	Recall current clip number.
	Enter Number + **[RECALL CLIP]**	Recall CLIP	CP	Recall entered clip number.
	[SHIFT] + IN	Search to IN	PB	Search to the marked IN POINT.
	[SHIFT] + OUT	Search to OUT	PB	Search to the marked OUT POINT.
	[INS/ADD]	Add Element	EE	Add current CLIP to end of current Playlist.
	Enter Number + **[INS/ADD]**	Add Element	EE	Add entered CLIP number to end of current Playlist.
	[ALT] + **[INS/ADD]**	Insert Element	EE	Insert current CLIP into current Playlist above highlight bar.
	Enter Number + **[ALT]** +**[INS/ADD]**	Insert Element	EE	Insert selected CLIP into current Playlist above highlight bar.
	[DEL ELEM]	Delete Element	EE	Delete currently highlighted element in Playlist.
	[ALT] + **[DEL ELEM]**	Delete Playlist	EE	Delete current Playlist.
	[LIST]	Load Playlist	PL	Load current Playlist and cue first element.
	Enter Number + **[LIST]**	Load Playlist	PL	Load entered Playlist number and cue first element.
	[SHIFT] + **[NEXT]**	Display next clip page	EE	Display the next page of clips.
	[SHIFT] + **[LAST]**	Display previous clip page	EE	Display the previous page of clips.
	[ALT] + **[NEXT]**	Step to next element	EE	Step to next element in current Playlist. Do not cue.
	[ALT] + **[LAST]**	Step to previous element	EE	Step to next element in current Playlist. Do not cue.
	[PREROLL]	Preroll to current time	PB	Searches to current time minus preroll value.

Current Mode	Operation	Function	Next Mode	Description
PB	**[REC]**	E to E	EE	Go to EE mode.
	[PLAY]	Play	PB	Playout video from its current location.
	T-BAR or **[SLOMO]**	Slomo	PB	Slomo video from its current location.
	[SHIFT] + T-BAR	Set Slomo Speed	PB	Set slomo speed without affecting current transport mode.
	[REV]	Slomo Reverse	PB	Slomo video from its current location in Reverse direction.
	[JOG]	Jog	PB	Jog video from its current location
	[FFWD]	FFWD	PB	FFWD video from its current location (press and hold key).
	[RWD]	RWD	PB	RWD video from its current location (press and hold key).
	[SHUT]	Shuttle	PB	Shuttle from current position.
	[NEXT]	Highlight Next Clip	PB	Highlight Next Clip in CLIP LIST.
	[LAST]	Highlight Previous Clip	PB	Highlight Previous Clip in CLIP LIST.
	Entered Time Code + **[GOTO]**	Goto TC	PB	Search to entered Time Code.
	[IN]	Mark IN Point	PB	Mark IN point based upon playback Timecode.
	[OUT]	Mark OUT Point	PB	Mark OUT point based upon playback Timecode.
	[SAVE CLIP]	Save CLIP	PB	Save CLIP with IN and OUT point at next available clip number.
	Entered Number + **[SAVE CLIP]**	Save CLIP	PB	Save CLIP with IN and OUT point at entered clip number.
	[RECALL CLIP]	Recall CLIP	CP	Recall current clip number.
	Entered Number + **[RECALL CLIP]**	Recall CLIP	CP	Recall entered clip number.
	[SHIFT] + IN	Search to IN	PB	Search to the marked IN POINT.
	[SHIFT] + OUT	Search to OUT	PB	Search to the marked OUT POINT.
	[INS/ADD]	Add Element	PB	Add current CLIP to end of current Playlist.
	Enter Number + **[INS/ADD]**	Add Element	PB	Add entered CLIP number to end of current Playlist.
	[ALT] + **[INS/ADD]**	Insert Element	PB	Insert current CLIP into current Playlist above highlight bar.
	Enter Number + **[ALT]** + **[INS/ADD]**	Insert Element	PB	Insert selected CLIP into current Playlist above highlight bar.
	[DEL ELEM]	Delete Element	PB	Delete currently highlighted element in Playlist.
	[ALT] + **[DEL ELEM]**	Delete Playlist	PB	Delete current Playlist.
	[LIST]	Load Playlist	PL	Load current Playlist and cue first element.
	Enter Number + **[LIST]**	Load Playlist	PL	Load entered Playlist number and cue first element.
	[SHIFT] + **[NEXT]**	Display next clip page	PB	Display the next page of clips.
	[SHIFT] + **[LAST]**	Display previous clip page	PB	Display the previous page of clips.
	[ALT] + **[NEXT]**	Step to next element	PB	Step to next element in current Playlist. Do not cue.
	[ALT] + **[LAST]**	Step to previous element	PB	Step to next element in current Playlist. Do not cue.
	[PREROLL]	Preroll to current time	PB	Search to current time minus preroll value.

Current Mode	Operation	Function	Next Mode	Description
CP	**[REC]**	E to E	EE	Go to EE mode.
	[PLAY]	Play	CP	Playout clip from its current location.
	T-BAR or **[SLOMO]**	Slomo	CP	Slomo clip from its current location.
	[SHIFT] + T-BAR	Set Slomo Speed	CP	Set slomo speed without affecting current transport mode.
	[REV]	Slomo Reverse	CP	Slomo clip from its current location in Reverse direction.
	[JOG]	Jog	CP	Jog video from its current location.
	[FFWD]	FFWD	CP	FFWD clip from its current location (press and hold key).
	[RWD]	RWD	CP	RWD clip from its current location (press and hold key).
	[SHUT]	Shuttle	CP	Shuttle from current time.
	[NEXT]	Highlight Next Clip	CP	Highlight Next Clip in CLIP LIST.
	[LAST]	Highlight Previous Clip	CP	Highlight Previous Clip in CLIP LIST.
	Entered Time Code + **[GOTO]**	Goto TC	PB	Search to entered Time Code.
	[IN]	Mark IN Point	CP	Mark IN point based upon playback Timecode.
	[OUT]	Mark OUT Point	CP	Mark OUT point based upon playback Timecode.
	[SAVE CLIP]	Save CLIP	CP	Save trimmed clip at current clip number.
	Entered Number + **[SAVE CLIP]**	Save CLIP	CP	Save trimmed clip at entered clip number.
	[RECALL CLIP]	Recall CLIP	CP	Recall current clip number.
	Entered Number + **[RECALL CLIP]**	Recall CLIP	CP	Recall entered clip number.
	[SHIFT] + IN	Search to IN	CP	Search to the marked IN POINT.
	[SHIFT] + OUT	Search to OUT	CP	Search to the marked OUT POINT.
	[INS/ADD]	Add Element	CP	Add current CLIP to end of current Playlist.
	Enter Number + **[INS/ADD]**	Add Element	CP	Add entered CLIP number to end of current Playlist.
	[ALT] + **[INS/ADD]**	Insert Element	CP	Insert selected CLIP into current Playlist above highlight bar.
	Enter Number + **[ALT]** + **[INS/ADD]**	Insert Element	CP	Insert current CLIP into current Playlist above highlight bar.
	[DEL ELEM]	Delete Element	CP	Delete currently highlighted element in Playlist
	[ALT] + **[DEL ELEM]**	Delete Playlist	CP	Delete current Playlist.
	[LIST]	Load Playlist	PL	Load current Playlist and cue first element.
	Enter Number + **[LIST]**	Load Playlist	PL	Load entered Playlist number and cue first element
	[SHIFT] + **[NEXT]**	Display next clip page	CP	Display the next page of clips.
	[SHIFT] + **[LAST]**	Display previous clip page	CP	Display the previous page of clips.
	[ALT] + **[NEXT]**	Step to next element	CP	Step to next element in current Playlist. Do not cue.
	[ALT] + **[LAST]**	Step to previous element	CP	Step to next element in current Playlist. Do not cue.
	[PREROLL]	Preroll to IN point	CP	Search to IN point minus preroll value.

Current Mode	Operation	Function	Next Mode	Description
PL	**[REC]**	E to E	EE	Go to EE mode.
	[PLAY]	Play	PL	Play current Playlist from highlighted element.
	T-BAR	Slomo	PL	Slomo Playlist from its current location.
	[JOG]	Jog	PL	Jog playlist from its current location.
	[LAST] (Playlist not playing)	Cue to Previous Element	PL	Cue to previous element in Playlist.
	[NEXT] (Playlist not playing)	Cue to Next Element	PL	Cue to next element in Playlist.
	[NEXT] (Playlist playing)	Go to next element	PL	Immediately go to the next element in the Playlist during Playlist playout.
	{SKIP}	Skip next element	PL	Skip next element during Playlist playout.
	[IN]	Mark IN Point	PL	Modify IN point of current Playlist element.
	[OUT]	Mark OUT Point	PL	Modify OUT point of current Playlist element.
	[RECALL CLIP]	Recall CLIP	CP	Recall current clip number.
	Entered Number + **[RECALL CLIP]**	Recall CLIP	CP	Recall entered clip number.
	[SHIFT] + IN	Search to IN	PL	Search to current element IN POINT.
	[SHIFT] + OUT	Search to OUT	PL	Search to current element OUT POINT.
	[INS/ADD]	Add Element	PL	Add current CLIP to end of current Playlist.
	Enter Number + **[INS/ADD]**	Add Element	PL	Add entered CLIP number to end of current Playlist.
	[ALT] + **[INS/ADD]**	Insert Element	PL	Insert current CLIP into current Playlist at highlight bar.
	Enter Number + **[ALT]** + **[INS/ADD]**	Insert Element	PL	Insert current CLIP into current Playlist at highlight bar.
	[DEL ELEM]	Delete Element	PL	Delete currently highlighted element in Playlist.
	[ALT] + **[DEL ELEM]**	Delete Playlist	PL	Delete current Playlist.
	[LIST]	Load Playlist	PL	Load current Playlist and cue first element.
	Enter Number + **[LIST]**	Load Playlist	PL	Load entered Playlist number and cue first element.
	[SHIFT] + **[NEXT]**	Cue to next IN/OUT	PL	Cue to next IN POINT or OUT POINT in current Playlist.
	[SHIFT] + **[LAST]**	Cue to previous IN/OUT	PL	Cue to last IN POINT or OUT POINT in current Playlist.
	{SPEED}	Assign speed to element	PL	Assign speed to highlighted Playlist element.

Reference

XV. SETUP MENU

Press **[MENU]**. The MENU indicator will turn on.

Turn wheel to select menu item.

Press the ***{CHANGE}*** softkey to open the choices for that item.

Press ***{BACK}*** softkey to save change and return to menu.

Press the ***{EXIT}*** softkey to exit the Setup Menu.

FUNCTION	DESCRIPTION
{CLEAR}	Select Item to Clear ***{CLR CLIPS}*** Delete all clips from 1000 to 1399, 2000 to 2399, 3000 to 3399, and 4000 to 4399. ***{CLR LISTS}*** Delete all Playlists, (00 19), ***{CLR MEMORY}*** Clear all non-volatile memory including clips and Playlists.
{DEFAULTS}	***{SET DEFAULTS}*** Set Setup Menu parameters to factory programmed defaults.
P1 ACCESS	Select ***{ENABLE}*** or ***{DISABLE}*** softkey to enable or disable control of P1.
P2 ACCESS	Select ***{ENABLE}*** or ***{DISABLE}*** softkey to enable ot disable control of P2.
TIME CODE SUPPORT	Set for each playback channel. Select TIMECODE ***{Supported}*** or ***{NOT Supported}***. For Profile XP, PDR select NOT supported. For other video servers select Supported
RECORD KEY SETUP	Select ***{Load Only}*** or ***{Load*** and ***Cue}***. If ***{Load Only}*** is selected, every time REC key is pressed, the Master REC clip will be loaded and parked at the tope of the clip. If ***{Load*** and ***Cue}*** is selected, the REC clip will be loaded, cued to current record time minus input video delay and put into PLAY.

FUNCTION	DESCRIPTION
VIDEO STANDARD	Select ***{PAL}*** or ***{NTSC}***.
STORAGE	Select ***{SHARED}*** OR ***{NON-SHARED}***. Select ***{Share}*** if P2 and P2 control two channels of the same device and the device has common storage. Select ***{Non-shared}*** if P1 and P2 control channels of two different devices or the device does not have common storage. Default – Shared storage.
PREROLL VALUE	Enter Preroll Value. Default – 5 seconds.
AUTO JOG	Select ***{ENABLE}*** to enable jog by turning wheel. Select {***DISABLE}*** to disable function.
SHUTTLE SPEED MAXIMUM	***{20x}*** Limit shuttle speed to 20x play speed. ***{49x}*** (Default) Limit shuttle speed to 49x play speed.
GANG RECORD	Select ***{CAM1}***, ***{CAM2}***, ***{CAM3}*** and/or ***{CAM4}*** to include the corresponding camera to the Gang. When Gang is established, only cameras that are selected will save clips if **[SAVE CLIP]** is pressed in EE mode. Default – All cameras included.

XVI. SPECIFICATIONS

Power:	90 VAC to 265 VAC adapter supplied with IEC connector APX Model #AP4108 +5v @ 4A, +12v @ 1.0A, -12V @ 0.6A
Size:	[L" x W" x H"] 12 3/4" x 8" x 1 3/4" (front) 3 5/8" (rear) [8 5/8" high to top of display]
Weight:	10 lbs.

Rear Panel Connectors:

VTR1, 2, 3, 4, 5, 6	(All DB9F)	VTR 1 and VTR 2 only function
GPI	(DB26HDF)	Not functional
Power	(DB9M)	
SHOTBOX	(DB9F)	Not functional
PBIO	(DB9F)	Not functional
Keyboard	(6-pin mini DIN)	
Ref. Video In	(BNC)	
LTC Input	(BNC)	
Ground	Threaded stud	

Display:	Easy to read, back-lit LCD display
Jog/Shuttle Wheel:	With mechanical detents
T-Bar:	With mechanical detent at x1 speed.

RS422 SERIAL CONNECTOR
9-Pin D-Type, Female (DB9F)

Pin #				
	1	Frame Ground	6	Receive Common
	2	Receive A ←	7	Receive B ←
	3	Transmit B →	8	Transmit A →
	4	Transmit Common	9	Frame Ground
	5	Spare		

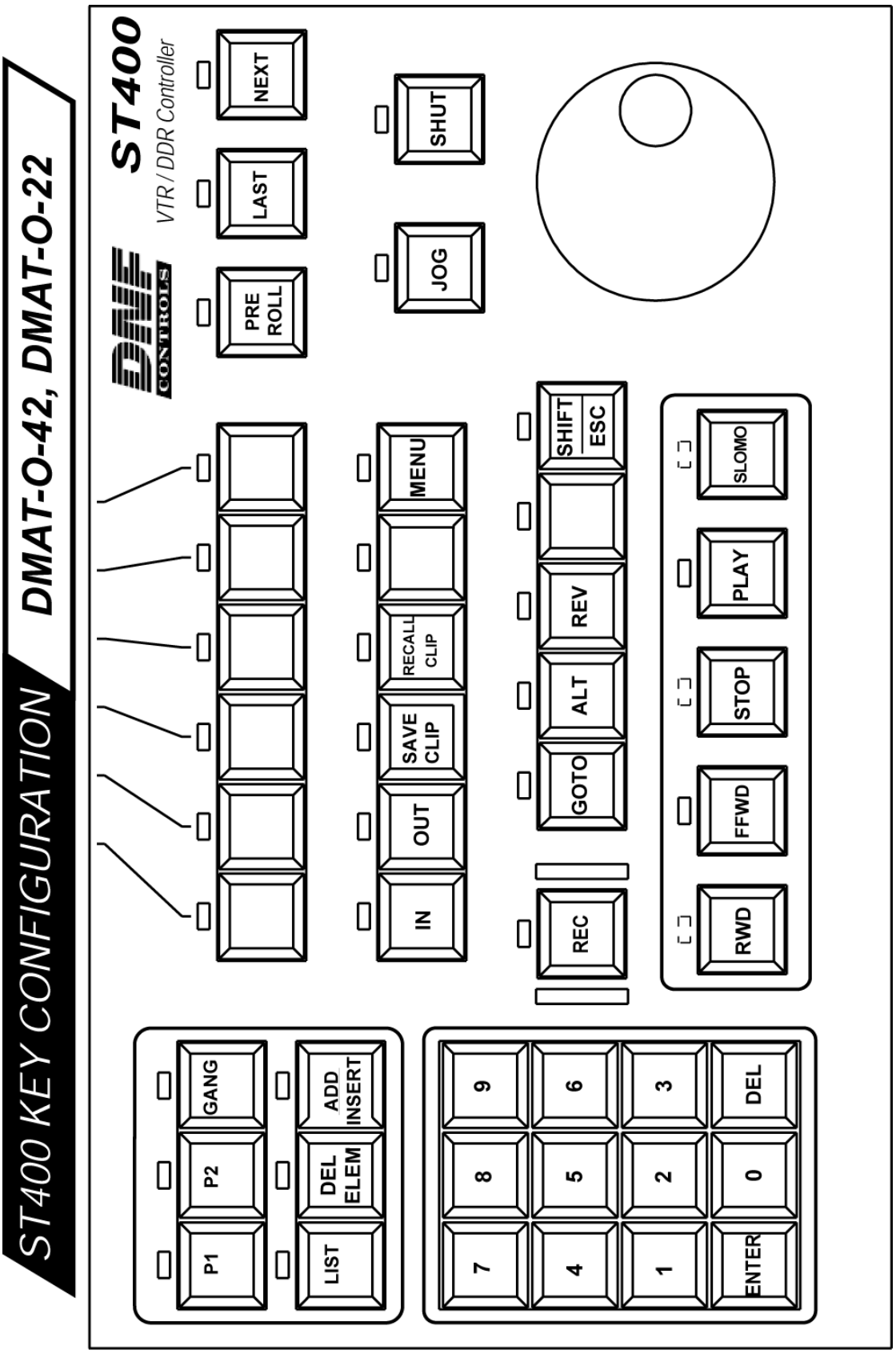
POWER CONNECTOR
9-Pin D-Type, Female (DB9M)

Pin #				
	1	+5v DC	6	+5 VDC
	2	+5v DC	7	Ground
	3	Ground	8	Ground
	4	+12 VDC	9	Ground
	5	–12 VDC		

GPI IN/OUT CONNECTOR
26-Pin D-Type, Female (DB26F)

Pin #	Function		Pin #	Function	
1	Not Used		14	GPI #5	No function
2	Not Used		15	GPI #6	No function
3	Not Used		16	GPI #7	No function
4	Not Used		17	Not Used	
5	Not Used		18	Ground	
6	Not Used		19	+5V	
7	Not Used		20	+5V	
8	Not Used		21	Not Used	
9	Ground		22	Not Used	
10	GPI #1	No function	23	Not Used	
11	GPI #2	No function	24	Not Used	
12	GPI #3	No function	25	Not Used	
13	GPI #4	No function	26	Ground	

XVII. KEY LAYOUT



XVIII. DNF CONTROLS LIMITED WARRANTY

DNF Controls warrants its product to be free from defects in material and workmanship for a period of one (1) year from the date of sale to the original purchaser from DNF Controls.

In order to enforce the rights under this warranty, the customer must first contact DNF's Customer Support Department to afford the opportunity of identifying and fixing the problem without sending the unit in for repair. If DNF's Customer Support Department cannot fix the problem, the customer will be issued a Returned Merchandise Authorization number (RMA). The customer will then ship the defective product prepaid to DNF Controls with the RMA number clearly indicated on the customer's shipping document. The merchandise is to be shipped to:

DNF Controls
12843 Foothill Blvd., Suite D
Sylmar, CA 91342
USA

Failure to obtain a proper RMA number prior to returning the product may result in the return not being accepted, or in a charge for the required repair.

DNF Controls, at its option, will repair or replace the defective unit. DNF Controls will return the unit prepaid to the customer. The method of shipment is at the discretion of DNF Controls, principally UPS Ground for shipments within the United States of America. Shipments to international customers will be sent via air. Should a customer require the product to be returned in a more expeditious manner, the return shipment will be billed to their freight account.

This warranty will be considered null and void if accident, misuse, abuse, improper line voltage, fire, water, lightning or other acts of God damaged the product. All repair parts are to be supplied by DNF Controls, either directly or through its authorized dealer network. Similarly, any repair work not performed by either DNF Controls or its authorized dealer may void the warranty.

After the warranty period has expired, DNF Controls offers repair services at prices listed in the DNF Controls Price List. DNF Controls reserves the right to refuse repair of any unit outside the warranty period that is deemed non-repairable.

DNF Controls shall not be liable for direct, indirect, incidental, consequential or other types of damage resulting from the use of the product.

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